

AMENDMENT TO THE CLAIMS

IN THE CLAIMS:

Claims 1-36 (Cancelled)

37. (Original) A method for the production of dental glass particles, comprising the steps of:

- a) generating an aerosol of droplets from a liquid wherein said liquid comprises a precursor to barium oxide, boron oxide, alumina and silica;
- b) moving said droplets in a carrier gas;
- c) pyrolyzing said droplets at a reaction temperature of from about 1000°C to 1500°C and for a residence time sufficient to remove liquid therefrom and convert said precursor to barium baroaluminosilicate glass particles having a refractive index from about 1.40 to about 1.60; and
- d) treating said glass particles to increase the surface area of said particles.

38. (Original) A method as recited in Claim 37, wherein said step of generating an aerosol comprises the step of ultrasonically atomizing said liquid.

39. (Original) A method as recited in Claim 37, wherein said carrier gas comprises air.

40. (Original) A method as recited in Claim 37, wherein said reaction temperature is from about 1000°C to about 1300°C.

41. (Original) A method as recited in Claim 37, wherein said reaction temperature is from about 1150°C to about 1250°C.

42. (Original) A method as recited in Claim 37, wherein said glass particles comprise not greater than about 0.1 atomic percent impurities.

43. (Original) A method as recited in Claim 37, wherein said glass particles have a particle density of at least about 95 percent of the theoretical density.

44. (Original) A method as recited in Claim 37, wherein said droplets in said aerosol have a size distribution such that no greater than about 30 weight percent of the droplets in said aerosol are larger than about twice the weight average droplet size.

45. (Original) A method as recited in Claim 37, wherein said barium oxide precursor comprises barium nitrate.

46. (Original) A method as recited in Claim 37, wherein said alumina precursor comprises aluminum nitrate.

47. (Original) A method as recited in Claim 37, wherein said boron oxide precursor comprises boric acid.

48. (Original) A method as recited in Claim 37, wherein said silica precursor comprises particulate silica.

49. (Original) A method as recited in Claim 37, wherein said method further comprises the step of annealing said glass particles.

50. (Original) A method as recited in Claim 37, wherein said method further comprises the step of coating said glass particles.

51. (Original) A method as recited in Claim 37, wherein said treating step comprises the step of contacting said glass particles with a basic solution or an acidic solution.

52. (Original) A method as recited in Claim 37, wherein said treating step comprises the step of contacting said glass particles with a basic solution or an acidic solution for a time sufficient to increase the surface area by at least about 100 percent.

53. (Original) A method as recited in Claim 37, further comprising the step of silanating said glass particles.

54. (Original) A method as recited in Claim 37, further comprising the steps of:

e) contacting said glass particles with an aqueous environment to form hydroxyl groups on the surface of said glass particles; and

f) silanating the surface of glass particles.

55. (Original) A method for the production of dental glass particles, comprising the steps of:

a) providing a batch of spherical glass particles having an average size of not greater than about 5 μm ;

b) treating the surface of said glass particles to increase the surface area of the glass particles by at least about 100 percent without substantially altering the bulk morphology of said particles;

e) hydrolyzing the surface of said glass particles; and

f) silanating the surface of said glass particles.

56. (Original) A method as recited in Claim 55, wherein said glass is an aluminosilicate glass.

57. (Original) A method as recited in Claim 55, wherein said treating step comprises contacting said glass particles with a basic solution or an acidic solution.

58. (Original) A method as recited in Claim 55, wherein said hydrolyzing step comprises contacting said glass particles with an aqueous environment for a time sufficient to form at least about 7 hydroxyl groups per square nanometer of glass surface area.

Claims 59-65 (Cancelled).